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ABSTRACT

Because earlier research suggests that children's and adolescents' achievement motivation is mediated by their implicit beliefs and theories about schooling, 70 students (half girls and half boys) in a middle class suburban school district in grades 3 through 12 were interviewed about several dimensions of knowledge about education, including reasons for schooling, conditions of learning, conceptions of intelligence, and curriculum objectives. Interviews followed a standard open-ended format, and after responding to each question, students were encouraged to elaborate and present reasons for their views. Findings revealed both increasing linear and nonlinear developmental trends. Students' ability to conceive of learners as active participants rather than passive recipients increased progressively with age, as did their valuing of nontraditional educational objectives such as art and music. Compared with students in the middle grades, older and younger students believed more strongly in the intrinsic value of education and in the value of metaeducational objectives such as learning to learn, and less strongly in the modifiability of intelligence through effort. The results suggest that children initially form a naive personalistic orientation toward education, which is rejected in early adolescence in favor of a practical, societal orientation; and that older adolescents adopt an orientation that coordinates both personalistic and societal perspectives. (Author/HOD)

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Coordinations of Social Reasoning in the Development of Orientations toward Education

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Running head:

DEVELOPMENT OF EDUCATIONAL ORIENTATIONS

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Abstract

Previous studies suggest that children's and adolescent's achievement motivation is mediated by their implicit beliefs and theories about schooling. The present work aims at understanding how these beliefs and theories are constructed, by relating this process to more general trends in the development of social reasoning. Seventy students in grades 3 through 12 were interviewed about several dimensions of knowledge about education, including reasons for schooling, conditions of learning, conceptions of intelligence, and curriculum objectives. Findings include both increasing linear and non-linear developmental trends. Conceiving of learners as active participants rather than passive recipients increases progressively with age, as does the valuing of nontraditional educational objectives such as art and music. Compared with students in the middle grades, oldest and youngest students believe more strongly in the intrinsic value of education and in the value of metaeducational objectives such as learning to learn--and less strongly in the modifiability of intelligence through effort--resulting in U-shaped trends for these variables. The pattern of results suggests a restructuring of educational orientations across the school years: Children initially form a naive personalistic orientation toward education, which is rejected in early adolescence in favor of a practical, societal orientation; older adolescents adopt an orientation that coordinates both personalistic and societal perspectives.

Coordinations of Social Reasoning in the Development of Orientations toward Education

Recent theoretical formulations emphasize the notion of distinct conceptual domains as a framework for interpreting the development of social cognition (Turiel, 1983; Turiel & Davidson, 1986). Specifically, it is proposed that interactions with social institutions differ in kind from either interactions with the self or with other individual persons, and this forms the basis for the three respective domains of social-conventional or societal knowledge, personal or self knowledge, and moral knowledge. Previous research has identified separate forms of conceptual development within these categories (Connell, 1971; Damon, 1977; Davidson, Turiel & Black, 1983; Furth, 1980; Nucci, 1981). An interesting question that arises from this theoretical perspective is how individuals coordinate distinct forms of knowledge in situations of overlapping or conflicting forms of interaction (Smetana, 1982, 1983; Turiel, 1983).

One context that may engender overlapping domain perspectives for a protracted period is that of children's interactions with education. Because so much of their experience is related to schooling, children and adolescents would be expected to form implicit theories concerning the purposes of schooling, the process of learning, the sources of intellectual ability, the relevance of curriculum objectives, and related issues. While interactions with institutional aspects of schools may result in knowledge of social conventions, institutional organization, and societal functions of schooling, other interactions give rise to

psychological knowledge such as conceptions about the nature of learning and intellectual ability. The development of specific types of social-conventional and psychological knowledge arising in educational contexts is now well documented (Dweck & Bempechat, 1983; Much & Shweder, 1978; Nicholls, 1978; Nicholls & Miller, 1983; Nucci & Turiel, 1978; Tharinger, 1983; Weinstein, 1983; Yussen & Kane, 1985).

The present study explores the somewhat broader question of whether children and adolescents acquire overall orientations toward the educational experience. If so, these orientations might involve either societal or psychological conceptions--such as those mentioned above--or coordinations of both domains. Based on interviews covering a range of educationally relevant issues with students in grades three through twelve, the first goal of the project was to obtain a concise characterization of overall orientations toward education. Changes in orientation across the age range were expected. The second goal was to examine these developments from the perspective of conceptual domains, both for the purpose of explicating children's educational orientations, and for the purpose of studying the domain coordinations that might be involved.

Method

Seventy students in grades three through twelve were individually interviewed about (a) the definition and purposes of education, (b) the process of learning, (c) the nature of intelligence, and (d) what should be taught in schools. The participants were recruited from a middle class suburban school district in Michigan, and included twenty students from

each of grades three, six, and nine, and ten students from grade twelve.[1] Equal numbers of boys and girls were included in each age group. The interviews followed a standard but open-ended format. After responding to each question, students were encouraged to elaborate and present reasons for their views. Interviews were tape recorded and later transcribed.

Interview items.

Included in the interview were three questions about the purpose of schooling and the meaning of education: (1) "What is the main reason for having schools?" (2) "What if the people in (student's town) decided to close down the schools. Would that be OK? Why or why not?" (3) "What if you were very rich and knew you would never need to work. Would you still need to go to school? Why or why not?"

Another set of questions asked students to reason about the nature of learning: (4) "Is it better to try and understand how problem solving in math works, or is it better to try and memorize the facts about problem solving?" (5) "How do little kids first learn to speak English?" (6) "How do kids first learn that 5 + 5 = 10? Can they learn it without being taught?"

A third set of questions elicited conceptions of intelligence: (7) "How can you tell if a person is smart?" (8) "Is knowing a lot of things the same as being smart?" (9) "Do kids get smarter as they get older?" (10) "Think of two 4-year olds; the first one is smart and the second one is not. When they get older, would it be possible for the second one to be smarter than the first?" (11) "Can people become smarter by trying harder?" (12) "Does school help people get smarter?" (This category includes more questions in order to address both general notions of

intelligence [questions 7-8] and in particular whether intelligence is viewed as modifiable [questions 9-12].)

Midway through the interview, the interviewer produced a pack of 15 index cards, in random order, labeled with various topics or activities that are taught, or could be taught, in schools. After some discussion if needed to clarify the referent for each card, the subjects' task was to rank order the cards according to the importance of teaching the corresponding topics or skills in schools. The topics were intended to represent the following three categories of possible educational objectives: Academic Objectives: (1) English, (2) Math, (3) Reading, (4) Science, (5) Social studies; Nonacademic Objectives: (6) Art, (7) Computers, (8) Gym, (9) Health and safety, (10) Music; and Metaeducational Objectives: (11) How to behave toward others, (12) Independent thinking, (13) Learning how to learn, (14) Good manners, (15) Good work habits. Students' rank orderings were then recorded by the interviewer.[2]

Coding.

The first goal was to provide concise descriptions of reasoning about the four areas mentioned (schooling, learning, intelligence, and curriculum) as a basis for determining patterns indicative of educational orientations. Accordingly, the coding scheme for interview questions relied on simple and discrete categories. This section provides a summary of coding criteria; further details are available upon request from the author.

For the first set of questions, the basic distinction coded was whether schooling is viewed as intrinsically or extrinsically valuable. That is, responses to each question in this category were examined for

statements about whether education is valuable basically for its own sake (e.g., "I wouldn't want them to close the schools, because I like to learn new things all the time;" "It wouldn't really bother me because I could still find a way to learn;") or valuable basically as a means to an end (e.g., "They shouldn't close the school--I think it would be very hard to get a good job;" "Kids have to go to school because its the law.").

Coding of responses concerned with the nature of learning focused on distinguishing a view of learners as active participants (e.g., "You should try to understand how math works, so you can do a problem without having to use the book") versus a view of learners as passive recipients of information from authorities (e.g., "It's better to memorize the answers, then you know they are right").

The third set of questions, dealing with intelligence, was coded to distinguish dynamic from static conceptions of ability (comparable to Dweck's "incremental" and "entity" categories [Dweck & Bempechat, 1983]). That is, answers were coded according to whether they emphasized the effect of effort upon competence (e.g., "Even the dumber kid could get smarter if he tried real hard in school"), or emphasized the idea of intelligence as a stable trait (e.g., "I do think some people are just smarter, and they will probably stay smarter").

Reliability and Scale Scoring.

Interrater reliability for coded interview items was assessed by recoding half the transcripts ($n = 36$) by a second judge; percent agreement ranged from 69% to 94% with an average of 78%. The data reduction strategy was to composite subjects' responses within each category to yield single scores for Intrinsic Conceptions, Active

Conceptions, and Dynamic Conceptions (derived from interview items); and Academic Objectives, Nonacademic Objectives, and Metaeducational objectives (derived from the card sorting task). For interview data, this involved summing responses of a given type within each category. For instance, a subject who received a code of "intrinsic" on all three questions in the first category would receive a score of 3 on a scale of 0-3 for Intrinsic Conceptions. Responses were similarly summed to yield scores on a 0-3 scale for Active Conceptions, and scores on a 0-6 scale for Dynamic Conceptions.

Scale scoring for curriculum objectives involved first determining how well the a priori categories (Academic, Nonacademic, and Metaeducational) corresponded to empirical sortings. This was accomplished by a factor analysis of ratings for the 15 curriculum topics, displayed in Table 1. Items loading more than .30 on a single factor were designated as representative of that factor; these items are asterisked in the table. For example, items 11 through 15, which had been categorized a priori as "metaeducational" objectives, were all found to load on Factor 1. The remaining two factors differed from the a priori categorization in two respects: First, students evaluated science and social studies as more akin to Nonacademic than to traditional Academic topics with respect to their importance as educational objectives; second, health and safety did not clearly fall within any of the three factors. Composite scores were then derived by averaging students' ratings of the representative items from each factor. Thus, a score for Traditional Objectives was composited from ratings given to (1) English, (2) Math, and (3) Reading; a score for Nontraditional Objectives was composited from ratings for (4)

Science, (5) Social Studies, (6) Art, (7) Computers, (8) Gym, and (10) Music; and a score for Metaeducational Objectives was composited from (11) Behavior toward others, (12) Independent thinking, (13) Learning to learn, (14) Manners, and (15) Work habits. (Note that the labels "Traditional" and "Nontraditional" are being used to distinguish these empirically derived categories from the a priori categories of Academic and Nonacademic objectives.)

Insert Table 1 about here

Results and Discussion

Table 2 presents age effects for the composite variables. The findings reveal both linear and U-shaped developmental trends. I will consider each of these effects in turn, beginning with the increasing age trends, and interpret them with reference to analyses of individual items making up the composite measure.

Insert Table 2 about here

Linear Age Trends

Conceiving of learning as an active process increases substantially as a function of age, consistent with Tharinger's (1983) finding of an increasingly "internal" conception of learning across a similar age range. Item analyses indicate, for example, that in third grade 29% believe it is better to try and understand math procedures than to memorize externally

given math facts; the proportion increases to 60% in grades six and nine, and 80% in grade twelve, tau = .32, $p < .01$ (question 4). Only 16% of third graders believe that youngsters actively seek to master language (most believe it is learned through direct instruction by elders), compared with 20% of sixth graders, 40% of ninth graders, and 60% of twelfth graders, tau = .33, $p < .01$ (question 5).

A second linear trend is the increased valuing of nontraditional academic objectives across grade level. Significant effects are found for all items included in this category, the strongest being for the teaching of computer skills, which receives a mean ranking of less than 5 from third graders, and greater than 10 from ninth and twelfth graders, $F = 15.02$, $p < .001$. It might be suspected that the lower importance placed on such nontraditional topics by the youngest students would be attributable to a response bias toward giving highest rankings to the more stereotypical, traditional topics. However, Table 2 indicates that although all groups give high ratings to traditional topics, third graders' ratings are lower than the others' (this is true for all three topics--english, math, and reading--in the category). In contrast, third graders assign greater importance to metaeducational objectives than do other groups. Lower rankings by third graders for both traditional and nontraditional topics, relative to other groups, are therefore largely attributable to third graders' higher appraisal of metaeducational objectives.

Nonlinear Age Trends

The notion that intelligence is related to effort (Dynamic Conceptions) shows a moderate U-shaped trend, with sixth and ninth graders

manifesting higher mean scores than either third or twelfth graders. However, it is important to qualify this description with reference to specific interview items. The first two items, dealing with the nature of intelligence, in fact show an increasing linear trend: Asked to describe how they know if a person is smart, 21% of third graders refer to the person's activities, rather than static conditions such as having a good report card; corresponding proportions are 45% of sixth and ninth graders, and 62% of twelfth graders, tau = .27, $p < .05$ (question 7). Similarly, only 30% of third graders distinguish between the amount of facts known and what one does with one's knowledge, as an indicator of intelligence, compared with 68% of sixth graders, 79% of ninth graders, and 89% of twelfth graders, tau = .47, $p < .001$ (question 8).

The significant quadratic trend for the Dynamic Conceptions scale (see Table 2) is accounted for by the remaining items of the category, which are concerned with the modifiability of intelligence. In particular, sixth graders are more convinced than other groups that intelligence is modifiable due to one's own efforts. For example, 68% of sixth graders believe an unintelligent 4-year old can, through making efforts, grow up to surpass his more intelligent peer; this compares with 41% of third graders, 56% of ninth graders, and 25% of twelfth graders (question 10).

These results indicate an increasing ability across age levels to reason about psychological causation, and are in line with previous findings (e.g., Lou, 1978; Nicholls, 1978) of development in reasoning about the nature of intelligence and achievement. Thus, there is an increasing trend toward thinking about intelligence as an active and

effortful process, rather than a static given. Nonetheless, as Nicholls (1978) has shown, during adolescence students also begin to differentiate effort from ability, and to consider them as independent sources of achievement. This is borne out in the present finding of a decreasing tendency between grades six and twelve to view intelligence as modifiable.

The two remaining composite variables need to be considered in conjunction. The first, Intrinsic Conceptions of schooling, deals with valuing knowledge above and beyond its social desirability or commercial payoff; the second, Metaeducational Objectives, deals with the importance of basic values and skills that go beyond specific course content. The same developmental trend is seen in both measures: highest scores are found at the youngest age level; scores decline through grades six or nine, followed by a rise at grade twelve. For example, when asked about the main reason for schools (question 1), 56% of third graders refer to a need or desire to learn, rather than to social function rationales such as preparing for future jobs. The proportion drops to 22% by sixth grade and 16% by ninth grade. This is perhaps not surprising as during the same period students are constructing increasingly accurate theories about the nature of societal organization (Furth, 1980), and would be expected to show an increasing concern with their future roles in society. Therefore it is noteworthy that the proportion of intrinsic rationales on this question climbs again to 44% in twelfth grade.

All five items in the Metaeducational Objectives category show a similar pattern (see Table 3). Third graders generally agree that school is a good place to impart dispositions toward proper interpersonal behavior, independent thinking, learning to learn, good manners, and good

work habits. Sixth and ninth graders are rather skeptical about these objectives; but by twelfth grade, students endorse most of them, especially learning to learn.

Insert Table 3 about here

Nicholls, Patashnick, and Nolen (1985) found that high school students who hold extrinsic conceptions of the purpose of education (e.g., obtaining prestige or a good job) are more likely to have cynical attitudes toward school achievement. One could therefore consider the sharp increase in extrinsic conceptions found here between grades three and nine as an indictment of the reasons for schooling that students acquire from their interactions with the educational system. However, the consistent increase in both intrinsic and metaeducational values between grades nine and twelve suggests instead that the extrinsic orientation may be a developmental phenomenon manifested by students in the middle grades as they acquire knowledge about society and about the relation of education to other societal functions.

Conclusion

These preliminary findings are consistent with the hypothesis that children form overall orientations toward education which are restructured over the school years. The conjunction of linear and curvilinear age trends suggests an interpretation of this restructuring along the following lines: In the early grades, students have a global enthusiasm for what schools can accomplish and for their own participation in

education. They take for granted the intrinsic value of learning and are accordingly optimistic that what can be learned in class goes beyond subject matter and includes benefits such as independent thinking, learning to learn, and work habits. At the same time, their conceptions about learning and intelligence indicate an expectation that these accomplishments will be passively received rather than effortfully produced. This combination of values and conceptions could be summarized as a "naively personalistic" orientation, or one that emphasizes personal rewards while underemphasizing both personal responsibility and the implications of education for functioning in the larger society.

In grades six through nine, students gain a more conscientious and practical perspective on schooling. The are increasingly aware of the active nature of learning, and are more likely than other age groups to believe that intelligence is an application of effort. They conceive of education's goals as extrinsic, realizing that eventually they will apply their knowledge to make a living and contribute to society. The result is a narrowed valuing of basic, traditional subject matter, and a rejection of the idea that schooling should impart personal values, skills, and dispositions in addition to subject matter knowledge. This new orientation, which could be termed "naively societal," thus reflects not only conceptual change, but a negation of features essential to the previous orientation.

By twelfth grade, students begin to adopt a more integrated orientation toward education. They are, if anything, more aware than ninth graders that education exists in a societal context, and therefore has extrinsic consequences and rationales. Nevertheless, they believe

more strongly than ninth graders in intrinsic and metaeducational goals. Twelfth graders' valuing of both intrinsic and extrinsic, both tangible and intangible benefits of education, suggests a new orientation that coordinates the personalistic and the societal perspectives held by younger students.

As was mentioned in the introduction, schooling provides a context for development of distinct domains of social reasoning. Among these are forms of psychological knowledge such as the conditions of intellectual achievement, and forms of societal knowledge such as the role of education as preparation for participation in society. The results suggest that these forms of reasoning influence students' overall educational orientations through a process of reciprocal interweaving, by which first one perspective and the other predominates, followed by their coordination. This interpretation, although tentative, provides a framework that may prove useful in further research on contexts involving overlapping domains of conceptual development.

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Footnotes

[1]Interviewing of the intended sample of 20 twelfth graders was interrupted by the arrival of summer vacation.

[2]To facilitate the task of ranking, subjects were first asked to separate the cards into two groups: important topics and unimportant topics. They then ordered the important topics, starting from the most important, until they arrived at a subset of topics believed to be of equivalent value (neither very important nor unimportant). For purposes of analysis, these rankings were scored as follows: 20, 19, 18, ... = very important topics; 5 = undifferentiated topics of lesser importance; 0 = unimportant topics.

Table 1

Factor Matrix Indicating Groupings of Topics According to Students' Rankings of their Importance as Educational Objectives.

Topic	Factor 1	Factor 2	Factor 3
1. English	-.12	.88*	.08
2. Math	-.36	.74*	.01
3. Reading	-.34	.76*	.18
4. Science	-.37	.03	.50*
5. Social Studies	-.43	.20	.38*
6. Art	-.07	.01	.74*
7. Computers	-.12	.13	.57*
8. Gym	-.01	.25	.60*
9. Health and safety	.21	-.24	-.04
10. Music	-.23	-.11	.62*
11. Behavior toward others	.79*	-.39	-.07
12. Independent thinking	.47*	-.29	-.26
13. Learn to learn	.45*	-.26	-.15
14. Manners	.78*	-.27	-.15
15. Work habits	.50*	-.05	-.12

Note. Varimax rotated factors are shown; identical factors are obtained with quartimax rotation.

*Items within each column that were selected as representative of the given factor.

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Table 2

Age Trends for Composite Variables.

Dependent Variable	Mean score by grade 3	6	9	12	linear F(1,66)	quadratic F(1,66)
Intrinsic conceptions	1.40	.65	.40	1.06	3.38	6.76**
Active conceptions	.60	1.10	1.30	1.60	11.34***	.27
Dynamic conceptions	3.25	4.97	4.46	4.34	2.69	4.55*
Traditional objectives	14.87	17.57	18.05	17.40	8.30**	5.34*
Nontraditional objectives	5.72	7.85	8.91	9.15	12.95***	1.65
Metaeducational objectives	12.07	4.95	6.14	9.26	5.66*	22.19***

Note. Intrinsic and Active Conceptions are scored on a scale of 0-3, whereas the range for Dynamic Conceptions is 0-6. All three educational objectives are scored on a scale of 0-20 (see Footnote 2).

*$p < .05$; **$p < .01$; ***$p < .001$.

Table 3

Age Trends for Rankings of Metaeducational Objectives

Dependent Variable	Mean score by grade 3	6	9	12	linear F(1,66)	quadratic F(1,66)
Behavior to others	10.40	3.55	4.85	9.20	1.22	11.95***
Independent thinking	12.25	4.35	6.70	9.50	2.30	13.02***
Learning to learn	12.65	8.40	8.45	12.10	.52	4.80*
Manners	12.15	2.25	4.40	8.80	4.25*	22.31***
Work habits	12.90	6.20	6.30	6.70	9.38**	5.86**

*$p < .05$; **$p < .01$; ***$p < .001$.